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AUTHOR Pugh, Richard C.; And Others
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ABSTRACT

"Adapting Instructional Techniques" was developed at Indiana University to improve the performance of teachers in classrooms equipped for interactive audio or video in a distance education setting. The formative evaluation of this videotape is described. The tape suggested modifications for five common instructional techniques used in conventional classrooms: (1) demonstration; (2) discussion; (3) group work sessions; (4) lecture; and (5) question and answer. Three researchers reviewed the initial version of the tape and submitted it for review by eight experienced distance education instructors. The third phase of evaluation consisted of a survey review completed by eight experienced school teachers, who were contemplating offering a distance education course. The prototype version was judged favorably by most evaluators, but some specific suggestions for improvement were given that included use of an advance organizer, more explication, more examples, and improved clarity and legibility of the graphics. An appendix contains the survey instrument. (SLD)

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Richard C. Pugh, James E. Siantz, Robert L. Appelman

Indiana University

Presented at the

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Methods

Methods for the development of the videotapes for this study included (1) selecting classroom episodes from regular classroom instruction, (2) identifying alternate methods for handling the episodes for a distance education class, (3) developing video vignettes to illustrate alternative methods for handling the episodes in a distance education setting and recording them on videotape, and (4) conducting a formative evaluation of the videotapes.

Five common instructional techniques which are used in conventional classroom settings were identified. An emphasis was placed on instructional moves within these instructional techniques which tended to "engage" the student. These instructional techniques were derived from materials produced by the Indiana University School of Nursing (Billings, 1992) and from workshop materials developed by the Indiana University Center for Excellence in Education (1994). The five, selected techniques were (1) demonstration, (2) discussion, (3) group work sessions, (4) lecture, and (5) question and answer.

Evaluation sources

Recommended procedures for the formative evaluation of the development of instructional materials have been reported by Dick and Carey (1990). These recommendations helped formulate a frame of reference for the formative evaluation phases of the video footage in this project. Three basic phases were followed.

Information source for phase one. The first phase was a one-to-one or clinical evaluation of the video footage. The three investigators of this study participated directly in this initial phase of the

formative evaluation. All three are experienced faculty at Indiana University and have been centrally involved in the technical and instructional support of the distance education classrooms for the past two years.

Information source for phase two. The second phase of formative evaluation for this project consisted of a review by an experienced group of eight distance education instructors, all of whom had taught at least one course using these technologies. The prototype version of the videotape which emerged from phase one was used for this review. This phase generated evidence for the content validity of the videotape.

Information source for phase three. The third phase of the formative evaluation consisted of a review by teachers who were representative of the target population of distance education instructors. The same prototype version of the videotape developed during phase one was used for this review. Eight, experienced school teachers who were contemplating offering a distance education course using these technologies reviewed the videotape. This phase served as a preliminary field test.

Instrument. A Survey of Perceptions instrument (See Appendix) was developed and administered during phases two and three to all respondents following their review of *Adapting Instructional Techniques* using a written response format. The Survey instrument was based on formative evaluation procedures described by Dick and Carey (1990). A summary of the information from the administration of this survey to the experienced Distance Education Practitioner group and the Consumer group is reported in Table 1.

Information received during phase one

Development of script. For each of the five selected instructional techniques, a comprehensive set of classroom instructional moves in a regular classroom was identified. A judgment was made about whether each instructional move was the same or different in a distance education setting. If it was judged to be different a revised statement of the instructional move was made. These steps were reviewed by an experienced distance education instructor and revisions were made in the statement

of instructional moves for each of the five instructional techniques and a final statement was prepared. From these statements of moves, a script was developed for each instructional technique. Based on the five scripts, video footage of simulations of various instructional moves was shot during the summer, 1995, in both a regular classroom setting as well as a distance education setting.

Development of prototype version. During the first phase of the formative evaluation, the one-to-one phase, the most obvious errors were identified and removed. This was conducted by direct interaction between the investigators and the experienced distance education instructor. During this phase, it was requested that the distance education instructor point out any reactions he had with the tape. It was judged that excellent rapport was established as evidenced by a very open interaction during the review of the footage with the investigators. From this review revised footage was assembled into an initial videotape which underwent four iterations of production. The current version of the videotape reflects these modifications.

Information received during phases two and three

Formative evaluation during phases two and three continued to include the collection of information to improve the effectiveness of *Adapting Instructional Techniques*. The purposes of formative evaluation during phases two and three were (1) to collect information from members of an experienced Distance Education Practitioner group concerning the content validity of *Adapting Instructional Techniques* and (2) to collect information from a Consumer group which served the purpose of a preliminary field test. In essence, *Adapting Instructional Techniques* was developed to improve the performance of teachers in interactive audio/video equipped classrooms in a distance education setting.

Table 1 contains a summary of the responses to the Survey of Perceptions by the Consumer group members and by the experienced Distance Education Practitioners group members. The frequency of each response is reported in parentheses after each response.

Table 1. Item-by-Group Summary of Responses

Survey of Perceptions Item	Responses from preliminary field test--Consumer Group (N = 8)	Responses from Distance Education Practitioner Group (N = 8)
Is the initial motivation material interesting?	Yes (6) Somewhat (2)	Yes (4) Somewhat (2) Not found (2)
Are the objectives clear and interesting as well as relevant?	Yes (6) Introduction needs clarity (2)	Yes (5) Part II needs elaboration (2) Part I needs context (1)
What skills that are illustrated in the videotape do you already possess?	Regular classroom teaching techniques (8) Distance education (0)	Regular classroom teaching techniques (7) Distance Education (7) No response (1)
Does the videotape provide adequate vocabulary?	Yes (5) No response (3)	Yes (3) Too much jargon (2) No response (2)
Does the videotape provide adequate pacing?	Yes (4) Too slow (2) No response (2)	Yes (3) Too slow (3) No response (2)
Does the videotape provide adequate chunk size?	Yes (4) Needs to be longer (2) No response (2)	Yes (4) Needs to be longer (2) No response (2)
Does the videotape provide adequate clarity of descriptions?	Yes (4) No response (4)	Yes (4) Differences not clear between regular and distance ed (4)
Does the videotape provide adequate clarity of examples?	Yes (5) No response (3)	Yes (3) Additional examples (3) Mixed (1) No response (1)
Does the videotape provide adequate sequence of content and activities?	Yes (4) No response (4)	Yes (2) Problems with sequence (4) No response (2)
Does the videotape provide adequate interest level?	Yes (4) Too many examples (2) No response (2)	No response (4) Needs to be improved (4)
Does the videotape provide adequate motivation?	Yes (2) Suggestions for improvement (2) No response (4)	Yes (1) Suggestions for improvement (4) No response (3)

Survey of Perceptions Item	Responses from preliminary field test--Consumer Group (N = 8)	Responses from Distance Education Practitioner Group (N = 8)
Is the content of the videotape too easy, too difficult, or just right?	About right (1) Too easy (3) No response (4)	About right (3) Too easy (2) No response (3)
How useful would you have found this information prior to your first distance education class?	Very necessary (7) Not applicable (1)	Useful (5) Useful but need more examples (2) No response (1)
List the topics which you judge to be the most helpful?	All topics (1) Classroom management (2) Technology (2) Techniques/methods (2) Regular/distance ed contrast (1)	Regular/distance ed contrast (2) Classroom management (3) Technology (1) No response (2)
List the topics which you judge to be the least helpful?	None (7) Lack of showing student interaction (1)	Everything OK (2) Not enough pedagogy (2) Too much with same instructor (2) No responses (2)
What topics might have been included in the videotape but were not?	Techniques, content delivery, & technology (3) Live interview footage (1) No response (4)	More examples with different instructors/techniques (3) Specific good vs. specific bad examples (1) Operation of Technology (2) No response (2)
Comments:	Student remarks might be included (1) Transition between Parts (1) Freeze frame monologue needs to be improved (1) No responses (5)	Nice quality video (1) Advance organizer needed (2) Vignettes needed for both men and women teaching (1) Regular ed/distance ed contrast not strong enough (1) Example does not generalize (1) No response (2)

When both groups were asked, "What skills that are illustrated in the videotape do you already possess?", all of the Consumer group responded that they possessed the regular classroom skills but none of the corresponding distance education skills. In contrast, seven of the Distance Education Practitioner group stated that they possessed both the regular classroom skills as well as the distance education skills. This information, which was a preliminary field test for the Consumer group and a content validation procedure for the Practitioner group, supported the purposes which had been defined for the two groups.

Characteristics of the prototype version judged positively by a majority of respondents

- A majority of the respondents in both groups stated that they found the initial motivation material interesting.
- A majority of the respondents in both groups found the objectives clear and interesting as well as relevant.
- A majority of the respondents in both groups judged that they would have found the information useful prior to their first distance education class.
- A majority of the Consumer group judged the clarity of the examples adequate.
- A majority of the Consumer group judged the vocabulary as adequate.

Characteristics of the prototype version which need to be changed

- An advance organizer is needed to introduce the tape. The context at the beginning of the videotape needs to be stated and the purpose of the videotape needs to be explicitly stated. This change was evident from members of the Practitioner group who judged that motivational and interest levels needed enhancement. Two members of the Practitioner group failed to identify the purpose of the videotape and were unsure about the initial motivational material.

- **Similarities and differences between regular classroom teaching techniques and distance education teaching techniques need to be explicitly stated for each segment of the videotape.** This change was identified from members of the Practitioner group who stated that the differences between regular classroom techniques and distance education techniques were unclear.

- **More examples of different instructors and different content need to be added.** This change comes from general comments from members of the Practitioner group and from comments addressing suggestions for improvement.

- **Instructor comments to be expressed more enthusiastically.** General comments from the Practitioner group included the recommendation that the voice-overs needed to be re-taped.

- **Improve the legibility of the graphics.** Two members of the Practitioner group stated that they had trouble reading the labels.

- **Identify jargon and find substitute language.** Two member of the Practitioner group stated that too much jargon was used when they were asked to comment about vocabulary usage.

- **Make corrections to instances of inaccuracies.**

  1. discrepancy between elementary and middle school lessons
  2. instructor walked up to the monitor instead of camera

  The need for these corrections was pointed out by some of the reviewers.

Next steps

In the developmental cycle, the next two sequential steps planned are (1) to revise the prototype version of the videotape following conclusions reached from this survey of perceptions and (2) to conduct a field test of the revised version of the videotape to members of the target population with emphasis given to the adaptation of instructional techniques to a distance education setting.

References

Billings, D. (1992). *Faculty guide to teaching in the nursing telecourse program.* Indianapolis: Indiana University School of Nursing.

Center for Excellence in Education. (January, 1994). *Learning activities.* Workshop materials. Bloomington, IN: Indiana University.

Dick, W. & L. Carey. (1990). *The systematic design of instruction,* Third Edition. New York: Harper-Collins Publishers.

Appendix

Perceptions from Viewing *Adapting Instructional Techniques*

Directions: This survey follows a formative evaluation model similar to that described by Dick and Carey (1990). Please write your responses in the space provided following each question after you have reviewed the videotape.

1. Is the initial motivation material interesting?

2. Are the objectives clear and interesting as well as relevant?

3. What skills that are illustrated in the videotape do you already possess?

4. Does the videotape provide adequate:

   - vocabulary?
   - pacing?
   - chunk size?
   - clarity of descriptions?
   - clarity of examples?
   - sequence of content and activities?
   - interest level?
   - motivation?
   - whether content was too easy, too difficult, or just right?

5. How useful would you have found this information prior to your first distance education class?

6. List the topics which you judge to be the most helpful?

7. List the topics which you judge to be the least helpful?

8. What topics might have been included in the videotape but were not?

Comments: